



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/670,118	09/26/2000	MICHAEL S. DARSILLO	99078X206650	5497
7590	11/10/2003		EXAMINER	
MICHELLE B LANDO CABOT CORPORATION BILLERICA TECHNICAL CENTER 157 CONCORD ROAD BILLERICA, MA 01821-7001			BERNATZ, KEVIN M	
		ART UNIT	PAPER NUMBER	21
		1773		
DATE MAILED: 11/10/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/670,118	DARSILLO ET AL.
	Examiner	Art Unit
	Kevin M Bernatz	1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-3,5,7,29,30,33,44-48 and 58-67 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-3,5,7,29,30,33,44-48 and 58-67 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Response to Amendment

1. Amendments to the specification and claims 1 - 67, filed on September 12, 2003, have been entered in the above-identified application.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

3. Claims 1 – 3, 7, 33 and 44 - 48 are rejected under 35 U.S.C. 102(b) as being anticipated by Nagamine et al. ('626). The examiner notes that Monie ('464 A1) is cited as supporting evidence in the following rejection.

Regarding claim 1, Nagamine et al. disclose an ink-jet recording medium (*Title*) comprising a substrate having a glossy coating thereon (*col. 3, lines 27 – 30 and Example 3, coating solution 3-b*), the glossy coating comprising alumina particles and a binder (*col. 4, lines 40 – 44 and Example 3*), and wherein the alumina particles have a surface area of about 30 – 80 m²/g (*col. 4, lines 1 – 3 and lines 45 – 49; and Example 3, coating solution 3-b*).

It has been held that where claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established and the burden of proof is shifted to applicant to

show that prior art products do not necessarily or inherently possess characteristics of claimed products where the rejection is based on inherency under 35 USC 102 or on *prima facie* obviousness under 35 USC 103, jointly or alternatively. Therefore, the *prime facie* case can be rebutted by **evidence** showing that the prior art products do not necessarily possess the characteristics of the claimed product. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). “When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.” *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

In the instant case, Nagamine et al. disclose a method of forming the alumina particles (*col. 3, lines 43 – 54*), but does not state whether these particles are fumed alumina or not. However, the Examiner notes that one of ordinary skill in the art would recognize that these particles are fumed alumina particles, as evidenced by Monie (*Paragraph 0009 – “[t]he use of fumed alumina in inkjet coatings is known as shown, for example, in U.S. Pat. No. 5,171,626”, i.e. Nagamine et al.*).

Therefore, in addition to the above disclosed limitations, the presently claimed property of the alumina particles being “fumed alumina” would have inherently been present because one of ordinary skill in the art would recognize that the particles referred to in Nagamine et al. are inherently “fumed alumina” particles, as evidenced by the Monie recitation.

Furthermore, regarding the limitation “the glossy coating has a 75° specular gloss of about 15% or more”, the Examiner deems that at least the embodiment presented in

example 3 would inherently meet this limitation, given that the outer coating layer (coating layer b) comprises a substantially identical composition to the claimed product (i.e. an inkjet recording medium comprising a glossy coating comprising alumina of a 50 nm particle size and a 60 m²/g surface area) and there is presently no evidence of record that such a layer would not inherently possess a specular gloss meeting applicants' claimed limitation.

Regarding claims 2 and 3, Nagamine et al. disclose substrates meeting applicants' claimed limitations (*col. 3, lines 31 - 33*).

Regarding claim 33, Nagamine et al. disclose a an ink-jet recording medium meeting applicants' claimed surface area limitations (*col. 6, lines 45 – 59 and Examples*).

Regarding claims 7, 44 and 45, Nagamine et al. disclose alumina to particle binder ratios meeting applicants' claimed limitations (*col. 6, lines 5 - 14*).

Regarding claim 46, the Examiner deems that at least embodiment 3 inherently meets the claimed 75° specular gloss limitation for the reasons cited above.

Regarding claims 47 and 48, the Examiner deems that at least embodiment 3 inherently meets the claimed mercury intrusion volume limitations, since the claimed and prior art products are substantially identical in structure and intended use, and as noted Paragraph 7 of the Office Action mailed November 1, 2002 (Paper No. 14), the mercury intrusion volume is simply a measurement of the porosity of the film.

Claim Rejections - 35 USC § 103

4. Claims 5, 29, 30 and 60 – 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagamine et al. as evidenced by Monie as applied above, and further in view of Mukoyoshi et al. (U.S. Patent No. 6,187,430 B1)

Regarding claims 5, 29 and 30, Nagamine et al. as evidenced by Monie are relied upon as described above.

While Nagamine et al. as evidenced by Monie disclose a broad range in particle sizes (5 nm – 5000 nm), Nagamine et al. fail to provide any examples or explicit motivation to utilize aggregate particles meeting applicants' claimed aggregate particle size limitations.

However, Mukoyoshi et al. teach that metal oxide particles used in ink jet recording layers should be formed from primary particles agglomerated into secondary particles possessing aggregate particle sizes meeting applicants' claimed size range limitations (*col. 2, lines 32 – 41 and col. 8, lines 15 – 31*) inorder to produce an ink-jet recording sheet "having an excellent gloss and a good ink-jet recording ability" (*col. 2, lines 25 – 31*).

It would therefore have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the device of Nagamine et al. to utilize agglomerates meeting applicants' claimed particle size limitations as taught by Mukoyoshi et al. inorder to produce an ink-jet recording sheet "having an excellent gloss and a good ink-jet recording ability".

Regarding claims 60 - 63, Mukoyoshi et al. disclose the primary particles which form the agglomerates should meet applicants' claimed size range limitations inorder to insure satisfactory transparency and high color density (*col. 8, lines 32 - 49*).

5. Claims 58, 59 and 64 – 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagamine et al. as evidenced by Monie and in view of Mukoyoshi et al. as applied above, and further in view of Tang et al. (U.S. Patent No. 5,965,244).

Nagamine et al. as evidenced by Monie and in view of Mukoyoshi et al. is relied upon as described above.

None of the above disclose controlling the amount of particles possessing the specific average particle diameter to within applicants' claimed percentage range.

However, Tang et al. teach the importance of controlling the coating to possess uniform colloidal particles so that a uniform pore size distribution will result, thereby reducing variations in capillary pressures and producing a high image resolution (*col. 2, lines 5 – 10 and lines 51 - 53*). The Examiner deems that it would have been obvious to one having ordinary skill in the art to have determined the optimum value of a cause effective variable such as the amount of particles within the "average particle size" through routine experimentation, especially given the teaching in Tang et al. regarding the desire to maximize the uniformity of the particles inorder to reduce variations in capillary pressures to produce high image resolution. *In re Boesch*, 205 USPQ 215 (CCPA 1980); *In re Geisler*, 116 F. 3d 1465, 43 USPQ2d 1362, 1365 (Fed. Cir. 1997); *In re Aller*, 220 F.2d, 454, 456, 105 USPQ 233, 235 (CCPA 1955).

6. Claims 1 – 3,7, 33 and 44 – 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurabayashi et al. ('454) in view of Kobayashi et al. ('359) and Okumura et al. ('001), and further in view of one or more of: Kruse ('306), Dransmann et al. ('855), Handbook of Fillers (2nd Ed, page 131), or Mochizuki et al. ('784 B1) for the reasons of record as set forth in Paragraph No. 11 of the Office Action mailed on May 12, 2003 (Paper No. 19).

7. Claims 5, 29, 30 and 60 – 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurabayashi et al. ('454) in view of Kobayashi et al. ('359) and Okumura et al. ('001), and further in view of one or more of: Kruse ('306), Dransmann et al. ('855), Handbook of Fillers (2nd Ed, page 131), or Mochizuki et al. ('784 B1) as applied above, and further in view of Mukoyoshi et al. ('430 B1)

Regarding claims 5, 29 and 30, Kurabayashi et al. ('454) in view of Kobayashi et al. ('359) and Okumura et al. ('001), and further in view of one or more of: Kruse ('306), Dransmann et al. ('855), Handbook of Fillers (2nd Ed, page 131), and Mochizuki et al. ('784 B1) is relied upon as described above.

None of the above provide motivation to utilize aggregate particles meeting applicants' claimed aggregate particle size limitations.

However, Mukoyoshi et al. teach that metal oxide particles used in ink jet recording layers should be formed from primary particles agglomerated into secondary particles possessing aggregate particle sizes meeting applicants' claimed size range

limitations (*col. 2, lines 32 – 41 and col. 8, lines 15 – 31*) inorder to produce an ink-jet recording sheet “having an excellent gloss and a good ink-jet recording ability” (*col. 2, lines 25 – 31*).

It would therefore have been obvious to one of ordinary skill in the art at the time of the applicant’s invention to modify the device of Kurabayashi et al. ('454) in view of Kobayashi et al. ('359) and Okumura et al. ('001), and further in view of one or more of: Kruse ('306), Dransmann et al. ('855), Handbook of Fillers (2nd Ed, page 131), and Mochizuki et al. ('784 B1) to utilize agglomerates meeting applicants’ claimed particle size limitations as taught by Mukoyoshi et al. inorder to produce an ink-jet recording sheet “having an excellent gloss and a good ink-jet recording ability”.

Regarding claims 60 - 63, Mukoyoshi et al. disclose the primary particles which form the agglomerates should meet applicants’ claimed size range limitations inorder to insure satisfactory transparency and high color density (*col. 8, lines 32 - 49*).

8. Claims 58, 59 and 64 – 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurabayashi et al. ('454) in view of Kobayashi et al. ('359), Okumura et al. ('001), one or more of: Kruse ('306), Dransmann et al. ('855), Handbook of Fillers (2nd Ed, page 131), or Mochizuki et al. ('784 B1), and Mukoyoshi et al. as applied above, and further in view of Tang et al. ('244).

Kurabayashi et al. ('454) in view of Kobayashi et al. ('359), Okumura et al. ('001), one or more of: Kruse ('306), Dransmann et al. ('855), Handbook of Fillers (2nd Ed, page

131), or Mochizuki et al. ('784 B1), and Mukoyoshi et al. is relied upon as described above.

None of the above disclose controlling the amount of particles possessing the specific average particle diameter to within applicants' claimed percentage range. However, Tang et al. teach the importance of controlling the coating to possess uniform colloidal particles so that a uniform pore size distribution will result, thereby reducing variations in capillary pressures and producing a high image resolution (*col. 2, lines 5 – 10 and lines 51 - 53*). The Examiner deems that it would have been obvious to one having ordinary skill in the art to have determined the optimum value of a cause effective variable such as the amount of particles within the "average particle size" through routine experimentation, especially given the teaching in Tang et al. regarding the desire to maximize the uniformity of the particles inorder to reduce variations in capillary pressures to produce high image resolution.

Response to Arguments

9. The rejection of claims 5, 27, 49, 52, 53 and 55 - 57 under 35 U.S.C § 102(b) – Nagamine et al.

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection and/or cancellation of the above noted claims.

10. The rejection of claims 1 – 3, 7, 33 and 44 – 48 under 35 U.S.C § 102(b) – Nagamine et al.

Applicant(s) argue(s) that Nagamine et al. fails to anticipate the claimed invention since Nagamine et al. requires a surface area of 90 m²/g or more as the outermost pigment layer and that Nagamine et al. fail to teach fumed alumina in Example 3. The Examiner respectfully disagrees.

First, the Examiner notes that Nagamine et al. merely teach that the alumina preferably has a specific surface area of 90 m²/g or more and Nagamine et al. states “an aluminum oxide with a specific surface area less than 90 m²/g *may* cause a lowering of the density of images obtained” (emphasis added) (col. 4, lines 6 – 8). Furthermore, applicant(s) are reminded that the rejection is based on the entire reference(s) and not just a piece meal analysis of the cited reference(s). In the instant case, Nagamine et al. clearly teach that fumed alumina may be used in the claimed invention (as evidenced by Monie) and that embodiments possessing alumina meeting applicants' claimed specific surface area limitations may be used as the outer surface layer in ink-jet recording media.

Finally, applicants' argue that the Nagamine et al. invention would not inherently possess the claimed specular gloss value, pointing to the present specification pages 27 – 29. The Examiner respectfully disagrees.

The Examiner notes that the specification pages 27 – 29 illustrate a tremendous effect of calendering on the reported gloss values for a coated substrate. The Examiner further notes that all the examples taught by Nagamine et al. teach “super-calendering

to give a recording medium according to the present invention" (col. 9, lines 26 – 28). Given the evidence in applicants' specification, as well as the lack of evidence directly comparing embodiments prepared according to the Nagamine et al. invention, the Examiner deems that there is sound basis for believing that the Nagamine et al. invention will meet applicants' claimed gloss limitations since the calendaring appears to be the biggest factor in producing a high gloss film.

11. The rejection of claims 5, 29, 30, 49 – 53 and 55 - 57 under 35 U.S.C § 103(a) – Kurabayashi et al. in view of various references

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection and/or cancellation of the above noted claims.

12. The rejection of claims 1 – 3, 7, 33 and 44 - 48 under 35 U.S.C § 103(a) – Kurabayashi et al. in view of various references

Applicant(s) argue(s) that the teachings in Okumura '001 regarding suitable surface areas cannot be applied to fumed alumina particles. The Examiner respectfully disagrees.

The Examiner notes that in ink-jet recording, it is known that the specific surface area is critical for ink absorption and is a factor of pore sizes, pore uniformity and particle diameter. As such, since both Kurabayashi et al. and Okumura et al. are directed to ink jet recording media, the Examiner deems that the teachings regarding desirable specific surface areas are relevant regardless of the means used to obtain

said surface area. Furthermore, the Examiner notes that Okumura et al. teach the equivalents of the entire range of specific surface areas and there is presently no showing of criticality of the claimed range over the broad range taught in the Okumura et al. invention.

Finally, applicants argue that fumed alumina is not a known equivalent to other forms of alumina for use in ink-jet recording media. The Examiner respectfully disagrees.

The Examiner notes that “fumed” alumina is merely alumina made by a specific process, which produces a very fine alumina which, like most colloidal sized materials, tends to agglomerate into secondary clusters/particles. The method of obtaining the alumina is not deemed to distinguish the structure of the claimed product and is therefore deemed equivalent to other forms of alumina. In addition, the limitation “fumed” is a product-by-process limitation and is not further limiting in so far as the structure of the product is concerned. “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. ***The patentability of a product does not depend on its method of production.*** If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” [emphasis added] *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP § 2113. Once a product appearing substantially identical is found, the burden shifts to applicant to show an ***unobvious***

difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983).

In the instant case, other than the *obvious* difference in particle agglomeration characteristics, not evidence of an unobvious difference (e.g. gloss, etc.) is presently of record.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M Bernatz whose telephone number is (703) 308-1737. The examiner can normally be reached on M-F, 9:00 AM - 6:00 PM.

Art Unit: 1773

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on (703) 308-2367. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



KMB
November 7, 2003



Paul Thibodeau
Supervisory Patent Examiner
Technology Center 1700